BIOLOGICAL ASSESSMENT OF THE LITTLE PATUXENT RIVER, CATTAIL CREEK, AND BRIGHTON DAM WATERSHEDS, HOWARD COUNTY, MARYLAND

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Biographical Sketch of Authors

Kristen Pavlik is an aquatic biologist for Tetra Tech, Inc. and is the technical lead on the implementation of a countywide biological monitoring and assessment program. She has been involved in monitoring network design, field sampling, laboratory sample processing, data management, QA/QC, and report writing. She also has substantial experience in translation of data and assessment results to public information useable by audiences of more varied technical backgrounds. James Stribling is an aquatic ecologist and Associate Director at Tetra Tech, Inc. He has worked for approximately 15 years in the field of pollution ecology, and specializes in monitoring program design, ecological data QA/QC, and application of assessment results to water resource management decisionmaking. Howard Saltzman is the Chief of the Howard County (MD) Stormwater Management Division (SWMD), Department of Public Works. Angela Morales is an Environmental Planner within the SWMD.

Abstract

The Howard County Department of Public Works (DPW) Stormwater Management Division (SWMD) recently initiated biological monitoring for its streams and wadeable rivers on an annual, rotating basin cycle. The primary goal of this biological monitoring program is to assess the current status of the County's stream biological resources and to establish a baseline for comparing future assessments. The County has identified the need to base the initial program design and to address more specific questions at three geographic scales: stream-specific, watershed wide; and, after the five-year sampling rotation is complete, countywide. To facilitate work in this watershed, the Watershed Restoration Division (WRD) of DNR assisted the County in fieldwork, laboratory processing, and taxonomic identification. Sampling methods were identical to those used by the MBSS: benthic macroinvertebrates sampled using a D-frame net in multiple habitats (20-jab method), visual-based assessment of physical habitat quality, and selected field chemistry. In addition, substrate particle size distribution and stream channel cross sectional area were evaluated for approximately 50% of the sites. Fish were sampled at half of the sites. A total of 60 sites were sampled in six subwatersheds. Biological condition scores were derived using the MBSS's Benthic Index of Biological Integrity (B-IBI). Results of the study will be related to specific programmatic activities, such as best management practice (BMP) siting and installation, stormwater permits, and protection/restoration activities. Six subwatersheds were sampled during a single index period (March 1 - April 15): Upper, Middle, Lower Little Patuxent River, Cattail Creek, and Upper and Lower Brighton Dam. All three subwatersheds of the Little Patuxent River received "poor" biological quality ratings and "non supporting" physical habitat assessments. The Cattail Creek and Upper and Lower Brighton Dam subwatersheds received "fair" mean biological condition ratings. Lower Brighton Dam had the lowest mean physical assessment of "non-supporting".